ABSTRACT

A new architecture is proposed for an optical node in a wavelength division multiplexed network. The optical node may be an optical add/drop node. Conventional add/drop nodes utilize one of two architectures – broadcast and blocking. The broadcast architecture is an architecture in which a copy of an optical signal is dropped to a drop path of a node while another copy continues on a through path. Thus, channels that occupy a specific portion of wavelengths (or spectrum) prior to the node are not available for use subsequent to the add/drop connectivity. In a blocking architecture, at least the through path (and often the drop path) is spectrally filtered. This permits wavelength reuse for add/drops in subsequent portions of the network. This disclosure proposes an optical node architecture that enables starting out with a low cost approach, such as broadcast, but includes connections to permit 'in-service' upgrade to more capable architecture. Increasing spectral reuse is enabled through the architecture.